**Dell's acquisitions** not yet paying dividends. **PAGE 8**


# NETWORKWORLD

THE CONNECTED ENTERPRISE = DECEMBER 17, 2012



CLEAR CHOICE TEST
SINGLE SIGN-ON

## Single sign-on moves to the cloud

Okta, OneLogin score high in test of 8 SSO solutions that beef up app security.

**PAGE 24**

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[1] Based on IBM testing and documented in IBM System x® Virtualization Server Consolidation sizing methodology. IBM Flex System x240 supports 2.7X more Peak Utilization Virtual Machines (VMs) than previous generation BladeCenter® HS22V.

[2] Based on IDC white paper "The Economics of Virtualization: Moving Toward an Application-Based Cost Model," Michelle Bailey, November 2009, http://www.vmware.com/files/pdf/Virtualization-application-based-cost-model-WP-EN.pdf

Optional IBM Flex System storage node available fourth quarter 2012.

# Pre-Configured Physical Infrastructures Save Time, Aid Validation When Building or Expanding the Data Center

The cost to design, build and commission a data center continues to increase as the price of labor, real estate, and utilities escalates. Organizations are being challenged to bring new data center capabilities into production faster to maximize return on investment (ROI) for IT expenditures, driving the need for shorter lead times to design, specify and deploy the infrastructure.

At the same time, new higher-density technologies and virtualization are complicating the specification of power distribution, thermal management and space utilization and impacting network reliability. The physical infrastructures needed to support these new technologies are becoming increasingly complex.

Virtualization and consolidation are also driving new network architectures. Rather than thinking in terms of cabinets and numbers of servers deployed, facilities managers and infrastructure managers are being challenged to think in terms of standard compute, network, storage, power and cooling modules as they scale out their facilities.

Today, more organizations seek a unified approach to physical and logical systems architecture to fully address the need for availability, agility, integration and security. A recent IDG Research Services survey shows that data center managers are interested in new pre-configured physical infrastructure designs that reduce the risk of building or expanding the data center.

The data center is the focus of much activity as businesses embark upon a wide variety of fresh initiatives in their quest for innovation. Nearly two-thirds of survey respondents report their companies have plans to build or modify one or more data centers. Data/business growth and disaster recovery/business continuity are the biggest drivers of data center construction or expansion plans, according to survey respondents.

When planning data center construction or expansion, companies place high priority on scalability/upgradability as well as speed of deployment. Respondents report that data center construction most often slows down in the planning phase.

Respondents feel the "best of brand" and pre-configured approaches to physical infrastructure configuration can help to reduce total cost of ownership (TCO) and maintain network reliability when building or expanding the data center. Roughly half cite a reduction in TCO and/or ensuring optimal hardware performance as benefits of using a "best of brand" approach. Respondents also cite predictable performance as another top benefit of a pre-configured approach to physical infrastructure design.

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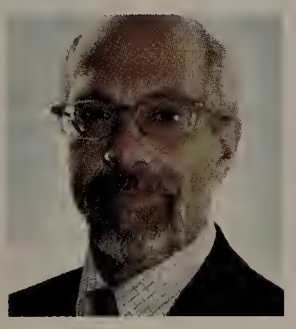
FROM THE EDITOR | JOHN DIX

# The multifaceted budget process

**With the bulk of the** IT budgets in place for 2013, it is a good time to reflect on how the budget process has morphed over the years to accommodate shifts in technology and evolving corporate demands and priorities.



It has been decades since IT could hole up in its glass castle and dictate how and when IT dollars would be spent on what, but every passing year increases the pressure on IT to accommodate more voices in the process.

That isn't to say the fundamentals have faded away. It still starts with trying to figure out how much money to allocate to operations vs. investing in techs that will drive growth or transform the business (the oft-cited run/grow/transform buckets). It is just that the process has to be so much more collaborative now that technology is more accessible and people across the organization see the potential to use it to further their corporate goals.

So, besides the usual pitches from line-of-business folks, you now have to deal with everything from HR wanting to explore techs designed to facilitate team-building to marketing hounding you about tools and strategies for how to get more out of social media.

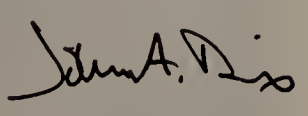
Of course some budget process change has been driven by corporate edict, such as demands to get smarter about energy consumption. Since the facilities group still often pays the IT power bills, that has meant synching up with them to figure out where the money is going and developing strategies to review IT purchase decisions with an eye on increasing efficiency.

And then there are the budget demands driven by the exploding BYOD movement. Employees are clamoring to use their new smartphones and tablets to access corporate resources and many department heads are anxious to leverage that enthusiasm, meaning calls are coming in from across the organization to explore what needs to be done to make that happen.

But perhaps the most profound change involving the budget process is the emergence of cloud computing. Business units, departments and even individual employees are exploring use of various cloud services, sometimes without the knowledge or consent of IT. Simply trying to outlaw the practice isn't an adequate strategy. As one IT leader said privately, "People can and will work around us if they feel IT is not on their side, doesn't understand, or is unresponsive or ineffective."

That means IT has to proactively engage parties interested in assessing cloud options, adding still more voices and options to the already complex IT budget process.

Where's the good news in all of this? IT is growing ever more important to the organization, and you're still in the catbird seat.



# inside

DECEMBER 17, 2012

# bits

## Heard of pay per view? How about pay per LAN?

**HP WILL ALLOW** enterprises to pay for managed LAN offerings based on usage, in much the same way they pay for cloud services, through a partnership with telecom service providers. HP's FlexNetwork Utility Advantage Program will let enterprises pay a monthly fee for networking equipment, based on the number of ports used, for example. The first operator to get onboard is Swisscom, which is offering HP's switches for $6.50 per month per Gigabit Ethernet port. ***tinyurl.com/c52nnws***

## IT hiring looking rosy

**NEARLY TWICE** as many CIOs are planning to expand their IT departments in the coming quarter than were three months ago, according to Robert Half Technology. In the firm's latest staffing report, 17% of CIOs said they plan to expand their departments in the first quarter of 2013, up from 9% in the prior quarter. Just 8% anticipate cutbacks in the first quarter. Finding talent remains a challenge, said 63% of the 1,400 CIOs polled. Database management is the skill set in greatest demand, cited by 48% of CIOs. Network administration and web development/website design followed, cited by 47% and 33%, respectively. tinyurl.com***/d2pys6z***

## RIM lands gov't contract

**U.S. IMMIGRATION** and Customs Enforcement (ICE) will begin a pilot deployment of smartphones running RIM's new BlackBerry 10 OS early next year. The deal, announced last week, is the first major U.S. government agreement disclosed by RIM for the OS ahead of its planned launch on Jan. 30. The size of the deal is unknown, but it is an important psychological boost for RIM and a good public endorsement. For years a mainstay of U.S. government mobile communications, users have become increasingly dissatisfied with BlackBerry devices as competing smartphones emerged with bigger screens, new features and thousands of apps. BlackBerry 10 and a new array of handsets are RIM's answer, but the big question is how many organizations will stick around or come back to RIM. ***tinyurl.com/cdagc4q***

## Data deluge shows no signs of slowing

**DURING THE** next eight years, the amount of digital data produced will exceed 40 zettabytes, which is the equivalent of 5,200GB of data for every man, woman and child on Earth, according to an updated Digital Universe study. To put it in perspective, 40 zettabytes is 40 trillion gigabytes — estimated to be 57 times the amount of all the grains of sand on all the beaches on Earth. To hit that figure, all data is expected to double every two years through 2020. tinyurl.com***/cszjony***

## Young people bedding their smartphones

**JUST HOW** tethered to their mobile devices are young people? Apparently they sleep together. Among 1,800 Gen Y students and workers (aged 18 to 30) surveyed by Cisco, 90% say they check their smartphones for updates in email, texts and social media sites, often before they get out of bed; 75% use them in bed; and 40% say they would feel like a part of them was missing if they couldn't use their smartphone. ***tinyurl.com/ct7ftwy***

**IT VIDEO**

### Looking back at 2012

Check out videos highlighting the year that was in the world of gadgets, robots, tech news, enterprise news, Apple and more. ***tinyurl.com/d6j92mm***

## Microsoft mulls IE disclosure leak

**MICROSOFT REFUTED** claims last week that an information disclosure leak in its Internet Explorer browser poses a privacy risk, arguing that the company publicizing the issue is seeking to put its competitors in an unfavorable light. Spider.io, a U.K.-based company in the advertising analytics field, alleged that two unnamed companies are improperly using a flaw in IE versions 6 through 10 that allows them to track whether display advertisements, sometimes buried far down in web pages, are actually viewed by users. Spider.io also alleged the issue could be used by an attacker to figure out what keys a person is clicking on a virtual keyboard. Microsoft rejected the allegation, saying there's no way for an attacker to know what kind of content is below a cursor. ***tinyurl.com/cubu4gm***

# peersay

## Call to action on 'Net standards

**HISTORICALLY THE POLICIES** of the Internet have been built from a culture that believes in free speech and open competition, and that rights are native to the individual and given to the state (Re: "IETF vs. ITU: Internet standards face-off"; tinyurl.com/cxva35w).

This cultural "bias" is what has made the Internet so important and effective in revolutions and defending the rights of the governed. If only companies and governments run the Internet, the cultural bias toward freedom may well be lost.

I have been in IT since before the Internet existed. I remember when networks were all private and run according to corporate goals. There was no free communication or interchange of data.

I urge our industry to become aware of this matter and weigh in on the side of freedom of speech and expression.

*Mark Massey*

## Google: Know your own history

**THE NICE THING** about Google is that you don't give them your information; you share it with them. You can see your file at any time. Playing Ingress basically means that Google knows where I am at any time. But I can go to Location History and see precisely what they know, and selectively delete it (Re: "Google Ingress: How to save the world with your Android phone"; tinyurl.com/a22qcpg).

Google spends lots of time personalizing your ads, but you can go in and tell them exactly what ads you want to see (and see what they thought you would want to see).

*vintermann*

## Of course true open source exists

**IN THE DEC. 3** issue, "RV" says that "nothing comes for free in this world because no one is working for free. Therefore, I believe there is no true open source" (Re: "What Cisco and Dell's Cloupia and Gale acquisitions mean to the future of IT"; tinyurl.com/bnyukwo).

Clearly, RV has not been around in open source circles very much. There are *tons* of programmers working for free on open source projects; I am one of them.

My entire company is based on open source software, and while I rarely delve into the source code of those programs, I gain a lot from the open source community in its support of my company. So when I write my own code and release it to the public, or work on open source projects, or contribute features, patches and bug requests, one could make the argument that I am trading my work for other people's work, but the notion that open source doesn't exist is very odd.

*Jon Daley*

## Clarification on Spacetrack Radar

**ACTUALLY THE CURRENT** Spacetrack Radar, the A/N FPS-85, was brought online in 1968-69, not 1961. The first one burned down and was replaced with the current one with minimum changes. I actually help track the "very first object" ever tracked with the radar in 1968 using what was called a suitcase processor (Re: "Air Force sets first post in ambitious Space Fence project"; tinyurl.com/cmfk6zw).

*JoeZim*

> If only companies and governments **run the Internet**, the cultural bias toward freedom may well be lost.

## iOS or Android?

**IT COMES DOWN** to the control of the development and distribution. First, there is only one place to get iOS apps. The DRM is decent, but more important, Apple engineers control the OS (Re: "Apple iOS vs. Google Android: It comes down to security"; tinyurl.com/cvd4x4t).

Google started off correctly with the idea of a free Unix platform, but then made two mistakes: They based their platform on Java instead of a native/performance language, and they had no requirements for hardware. The early days of mobile applications had these very problems: performance and fragmentation. Google should have known this and factored it in. Of course, there is also the issue of a single point of purchase, rampant piracy and a questionable app development environment.

*BigInMemphis*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# Dell's acquisitions not yet paying dividends

BY AGAM SHAH, IDG NEWS SERVICE

**DELL'S EFFORT** to move away from PCs into enterprise products has been slow as the company battles a challenging economy and tries to weave together acquisitions in a coherent manner.

Dell's legacy has been entrenched in the PC business, but in recent years it has focused on moving into the fast-growing enterprise segment to improve profits. Dell is pushing hot technologies like cloud and virtualization products to link its mainstay client and server hardware business to newer business areas such as networking, storage, services and, increasingly, software.

Dell's acquisition spree over the past few years has helped reshape its strategy. Dell spent $4.9 billion on seven companies this year, with a marquee acquisition of Quest Software, which is the "foundational platform" for the company's evolving software strategy, said Dell CFO Brian Gladden at a technology conference last month.

But while Dell seems to be making the right moves, analysts say it has been slow to pull together assets from the acquisitions to simplify product lines. Many of the acquired companies are operating independently and have unrelated products, which is hurting Dell's long-term plan to expand product sales. It could be years until such results are visible. Looking back at this year, analysts are also wondering how long it will take for the company to establish a cohesive software strategy around Quest, which offers a range of software for database management, data protection, virtualization, compliance and security.

A challenging economy also has customers tightening pockets and delaying purchase plans, which is an ongoing issue for Dell's integration efforts. Dell's revenue for the most recent quarter ending on Nov. 2 was $13.7 billion, a fall of 11% compared to the same quarter a year ago. Net income also dropped to $475 million during the quarter from $893 million a year ago.

The company could be biting off more than it can chew with its dozens of acquisitions, but it is trying to expand its sales reach by bringing together a wide range of products, says Roger Kay, principal analyst at Endpoint Technologies Associates.

"A transition like this is not easy, and inevitably there will be a period where the gap is glaring," Kay says. "It could take another five years for it to reach some kind of critical mass that will support the company's cost structure."

Dell in recent years has acquired largely profitable companies, with some offering complementary products and others pushing the company into new markets. In addition to Quest, other key acquisitions include services company Perot Systems, storage companies EqualLogic and Compellent, cloud company Boomi, systems management company Kace, virtual desktop company Wyse Technologies, networking company Force10 Networks and security company SecureWorks.

Dell's acquisitions are relevant to its strategy but the transition requires that the salesforce be "re-engineered" to sell enterprise products, which can be harder than building new enterprise-focused products and services, says Matthew Eastwood, group vice president and general manager of IDC's Enterprise Platform Group.

"This is a marathon, not a sprint. But it's a safer strategy with better potential than doing big bang acquisitions. But it does take time," Eastwood says. "Think IBM over the past 20 years or EMC over the past 10 years versus what HP tried to do with EDS and Autonomy."

> **"A transition like this is not easy, and inevitably there will be a period where the gap is glaring.**
>
> **ROGER KAY,** PRINCIPAL ANALYST, ENDPOINT TECHNOLOGIES ASSOCIATES

PC demand is also falling off much faster than Dell can make up for with the enterprise infrastructure and software segment, Eastwood says.

"The recent and sudden drop in PC demand caught many by surprise. If demand stays this soft, Dell could face a call to split the company because their enterprise assets are clearly being undervalued on Wall Street," Eastwood says.

But Dell is determined to retain its PC business to deliver a full portfolio of client and server products. Moving away from low-cost PCs, its focus now is on higher-priced computers like the XPS desktops and laptops that can deliver better margins. Homegrown smartphone sales have been scrapped in favor of higher-priced tablets like the $499 XPS 10 and $649 Latitude 10 that can be used at work and play. The burgeoning bring-your-own-device usage model is seen by Dell as key to selling more client products to enterprises, and it hopes Wyse will play a big role in that.

But the biggest question revolves around Quest Software. It was acquired for $2.4 billion and is the centerpiece of Dell's wide-ranging software strategy, which was put into play this year, notes Charles King, principal analyst at Pund-IT.

Dell isn't a big software company and King says that rounding up Dell's existing software assets around Quest could take a while. Dell hopes to unify software tools from acquired companies like Wyse, Kace, SecureWorks, SonicWall, AppAssure, Scalent, Make Technologies, Clerity and Boomi under Quest. The software offerings will complement Dell's services and data-center technology stack, which includes PowerEdge servers and a growing list of networking and storage products being acquired by the company.

Dell's Gladden says the company is still doing its due diligence on Quest, and integrating assets is not an overnight job.

"We see it as we work through that process and [do our] due diligence of understanding the company, [that it's] not only a lot of interesting portfolio products to help us in other parts of our portfolio aligned with cloud, security focus and systems management and some of the things we already have in the marketplace, but also an opportunity to run the place better," Gladden says.

Some of Dell's acquisitions have paid off, though. Most of Dell's business units underperformed during the most recent fiscal quarter, save servers, which saw a shipment and revenue boost. A part of Dell's success in servers could be attributed to Boomi and Kace, which are complementary offerings, King says. Boomi eases deployment and management of cloud applications, and provides tools to easily shuffle data between on-premise and hosted applications.

Dell is a leader in iSCSI storage with EqualLogic, and is doing well in vertical markets like education and healthcare with Perot Systems, both of which slipped into Dell's operations very well.

To its credit, Dell has done better than most companies at preserving the culture of acquired companies and keeping them productive, which is in notable contrast to Hewlett-Packard, which overpaid for Palm, Autonomy and EDS, analysts say. But Dell still has issues to contend with and so it can't afford to charge a premium for its enterprise products just yet.

"Dell is not in a comfortable position. It is not as mature in solutions as IBM or even HP, and it doesn't have the brand premium of Apple, but my sense is that if it sticks to its knitting, the company can ultimately be successful," Endpoint Technologies' Kay says. ■

# Nicira CTO shares peek of company's SDN plans

## Casado divulges software-defined network vision for VMware, other environments

BY BRANDON BUTLER

**NICIRA, THE** software-defined networking startup that VMware purchased for $1.2 billion earlier this year, plans to release an SDN product that runs independent of the underlying hypervisor and hardware that will work in VMware environments and beyond.

Nicira co-founder and CTO Martin Casado, during an interview at VMware offices last week, shared the firmest details yet of how Nicira technology will fit with VMware's.

Although he did not provide specific details about the integration or its time frame, Casado says he expects the capabilities to be released in mid-to-late 2013.

SDN portends a fundamental shift in the way data centers operate that will be similar to the move to server virtualization that VMware ushered in, says Casado, who is a developer of OpenFlow, a programmable network protocol designed to manage and direct traffic among routers and switches from various vendors.

Evolution of next-generation networking technology hadn't kept pace with the advances on the compute side, until virtual networking's emergence in recent years, Casado says. The ability to abstract network controls from the underlying hardware gives more control and agility to network engineers and allows the data center to operate at the same speed of compute virtualization.

Martin Casado

The key to a successful SDN starts at the compute hypervisor, Casado argues. "The first piece of network intelligence is at the hypervisor level," he says, which he calls the "access layer to the network." When the hypervisor controls the network virtualization, network applications (like security components, quality of service checks and isolation of networks) can be integrated into the hypervisor, greatly simplifying the network architecture. Enabling this capability creates advantages such as faster provisioning of network resources, mobility of virtual networks and the ability to decouple the hardware from networking.

Casado hopes next year to roll out a vendor-neutral, hypervisor-neutral and cloud management platform-neutral SDN controller that would integrate with the hypervisor to enable this capability. There will be two versions, he says: one integrated to work in the VMware stack of vSphere, vCloud Director and the ESX hypervisor, and another to work with other hypervisors and cloud management platforms, from Xen, KVM and OpenStack.

This new idea enables choice for customers, Casado says, but it doesn't "kill" legacy networking vendors. "It's a disruptive technology," he says, that has incumbents on their heels. "But that doesn't mean they'll die." There has been much discussion since VMware bought Nicira of what the move might mean for VMware parent company EMC's relationship with Cisco.

Applications that run on a virtual network can be hardware- or software-based, Casado says. Certain customers may, for example, keep a proprietary specialized piece of network security hardware but expose other areas of the network to an SDN, he says. "Shifts [in technology] open up options for customers, they don't eradicate systems," he says, adding that server OEMs actually have sold more hardware after compute virtualization's mainstream adoption.

VMware's network virtualization strategy is similar to its approach for cloud management; both are optimized to work in VMware environments, but are compatible with platforms from other providers. In addition to purchasing Nicira, VMware earlier this year bought DynamicOps, which provides a tool for integrating systems across hypervisors. A few months after the DynamicOps purchase, VMware announced new features within vSphere allowing it to provision workloads to the Amazon Web Services cloud and other cloud platforms.

At the most recent OpenStack Summit conference in San Diego, VMware CTO Steve Herrod announced integration of OpenStack into the vSphere management console, allowing VMware customers to manage OpenStack private clouds. ■

## Juniper jumps on SDN startup

Juniper Networks last week acquired Contrail Systems, a startup that makes controllers for software-defined networks, for $176 million in cash and stock.

Contrail was founded early this year by officials from Google, Cisco, Juniper and Aruba. CEO Ankur Singla served as CTO and vice president of engineering at Aruba Networks. CTO Kireeti Kompella had been CTO and chief architect of the Junos operating system software at Juniper. Kompella authored several Internet drafts and RFCs on MPLS, IS-IS routing, Layer 2 VPNs, OSPF and traffic engineering.

Juniper was a strategic investor in Contrail earlier this year. Contrail closed a $10 million round of funding in July, led by Khosla Ventures.

The company had been in stealth mode and expected to release its product, a distributed controller that supports both BGP and XMPP, next year.

Juniper, meanwhile, was on the hunt for an SDN controller. Earlier this year, Executive Vice President Bob Muglia said Juniper is working with other industry players on an open source-based controller for SDNs that would be an alternative to proprietary offerings from VMware and Cisco.

It appears it's found a controller, if not the controller.

"We recognized the inherent advantages of Contrail Systems' architectural approach and we are excited to take this next step to acquire and combine Contrail Systems into our team," Muglia wrote in a blog announcing the acquisition. "We anticipate closing before the end of the year."

A Juniper spokesperson said the company would not make company executives available to elaborate on the purchase or Juniper's overall SDN strategy. Juniper has been largely silent on an SDN strategy while rivals Cisco, Brocade and Arista have articulated broad plans.

The spokesperson said Juniper would divulge its SDN strategy early next year.

*— Jim Duffy*


# 10 top technology stories of 2012

BY NETWORK WORLD STAFF

**2012 has been a year of re-invention among the tech industry's biggest players, with Microsoft overhauling many of its key product lines, most notably Windows, while also boldly entering the hardware market with Surface tablets. HP slashed its workforce as CEO Meg Whitman reshaped an industry icon that has gone through many shifts in recent years. The transformation to the cloud continued practically unabated (save for those pesky outages!) and suddenly every company seemed to be a software-defined something or other, or was snapping up an SDN company. Here's a look back at the eventful year that was.**

## The Web rebellion: Blackout protest snuffs SOPA and PIPA

**THE JAN.** 18 Web "blackout" in protest against the Stop Online Piracy Act and the Protect IP Act, with some 10,000 sites participating, was a culmination of a popular movement that had been bubbling up against the bills for months. It was also the first online uprising that had a major, direct impact on the U.S. lawmaking process. Within days many lawmakers abandoned the bills. In the House of Representatives, Rep. Lamar Smith, the lead SOPA sponsor and Texas Republican, killed the bill. A vote on PIPA was delayed, and congressional support fizzled. The bills differed, but both would have allowed the U.S. Department of Justice to seek court orders requiring U.S. online advertising networks and payment processors to stop doing business with foreign websites accused of infringing U.S. copyright. Supporters of the bills say lawmakers still need tools to stop international copyright piracy, so the fight will continue.

## SDN everywhere

**WHILE SOFTWARE-DEFINED** networking, OpenFlow and SDN remain far from being household words, enterprise IT pros have been hard-pressed to avoid these terms in 2012. The OpenFlow-focused Open Networking Summit sold out in April, fueled by interest in technology promising a more flexible and programmable network architecture. Startups such as Big Switch Networks, Plexxi, PLUMgrid, Cisco spin-in Insieme and Nicira all grabbed headlines, as they scored gobs of venture funding, got bought out or rolled out products. Meanwhile, established vendors such as Brocade, Cisco, Juniper, HP and Alcatel-Lucent aired their SDN plans, such as Cisco ONE.


## New-look Windows

**MICROSOFT'S HUGE** year for new products included the rollout of Windows 8 for servers and clients, Windows Phone 8 for smartphones, the Surface tablet, Office 2013 and Cloud OS, to name the major ones. Microsoft hasn't been shy about promoting the technologies either, with speculation that it shelled out

ILLUSTRATION: MICHAEL AUSTIN

Microsoft


# WINDOWS SERVER 2012 LETS YOU VIRTUALIZE YOUR NETWORKS.

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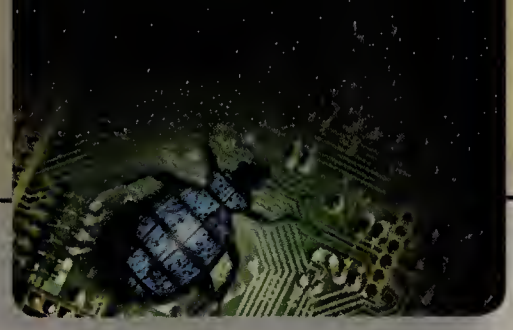
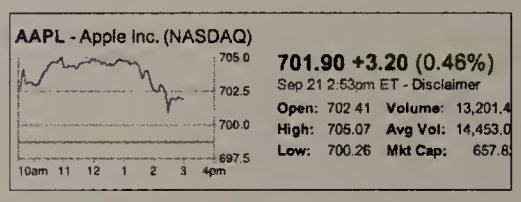


$1 billion-plus to push Windows 8, even working it into the story line of a TV sitcom. While Microsoft rolled out lots of new software, CEO Steve Ballmer is now calling Microsoft a "devices and services" company. Meanwhile, the product overhauls weren't without drama: Windows 8 chief Steve Sinofsky left Microsoft shortly after the revamped Windows debuted.




## Apple on top

**AFTER SMOKING** little companies such as IBM, Microsoft, GE and Exxon, Apple in August became the most valuable company in history, with a market capitalization of $623.5 billion. Fueled by investor and market excitement over new iPhone, iPad and Mac products, the company's stock price also hit an all-time high in September, when it rose to $705. All was not rosy, though, as the company's shares dove below $600 late in the year.

## HP tosses and turns

**HP CEO** Meg Whitman inherited some pretty big messes last year, and one painful move she made to clean things up was to announce that the company would whack 8% of its workforce via layoffs and retirement offers —about 27,000 jobs. The company, which is focusing heavily on the cloud now, expects the cuts to save it $3 billion to $3.5 billion in fiscal year 2014. Then in November Hewlett-Packard shocked investors by announcing an $8.8 billion non-cash charge in its quarterly earnings, mainly as a result of what it called serious accounting improprieties that occurred at U.K. software company Autonomy before HP acquired the firm for more than $10 billion in 2011. HP essentially laid blame on Autonomy's former management, and that company's founder, Mike Lynch, who denied any problems.

## Flame: Malware for nation-states

**IN MAY,** security researchers revealed that they had discovered a highly complex, massive piece of malware that had been used for cyberespionage against targets in Iran and other countries in the Middle East and North Africa for at least two years. The espionage toolkit, dubbed Flame, shared a component with Stuxnet, the malware targeting industrial systems that had created problems for Iran's nuclear centrifuges. In lines of code, Flame dwarfed Stuxnet, and researchers came to believe that both pieces of malware had been created by programmers coordinated by a nation-state or states, most likely the U.S. and Israel. The plot thickened in June when *The New York Times* broke a story that U.S. President Barack Obama had ordered the Stuxnet cyberattack to keep going, once the malware broke free on the Internet and was exposed, to do as much damage to the Iranian program as possible. The White House declined to comment, but there is little doubt that malware has come of age as a geopolitical weapon.

## RIM makeover

**TECHNICALLY RESEARCH** in Motion CEO Thorsten Heins, who took over that position in January, isn't a totally new face — he has been with the BlackBerry maker since 2007. But his successors, co-CEOs Mike Lazaridis and Jim Balsillie, had been in charge since the 1980s, through the company's dominance of enterprise wireless and more recently during the BlackBerry's fall from popularity in the face of growing iPhone and Android acceptance in the enterprise (one recent report pegged RIM's U.S. share as being just 1.6%). Next up for RIM: its make-or-break BlackBerry 10 rollout at the end of January.

## The e-lection

**TECHNOLOGY ISSUES** got short shrift compared to budget, taxes and other hot button topics during the presidential election, but that's not to say tech didn't play a big role in the results. Citizens of New Jersey, affected by Hurricane Sandy, were allowed to vote by email or fax, but technical issues stymied many of them. The process also renewed security concerns about email voting. Meanwhile, the Obama campaign blew away Mitt Romney's camp on the social media front, measured by Facebook and Twitter followers, and the president's campaign was also said to have tapped into social media analytics to gauge voter sentiment. Romney's "Orca" project ran into serious glitches at key times and might have done the campaign more harm than good.

## Cloud, cloud and more cloud

**AMAZON WEB** Services (AWS) may be a market leader, but it has been plagued by outages, giving Rackspace, Terremark, Google, Microsoft and others a chance to make inroads. Other high-profile cloud outages brought down popular sites such as Reddit, Imgur, Airbnb and Salesforce.com's Heroku platform. The disruptions continue to raise questions about how trustworthy the cloud is, and whether companies can really afford to put mission-critical data into it. Meanwhile, it was another busy year for OpenStack, with VMware's addition to the open source project and the launch of an independent foundation. The software as a service (SaaS) and infrastructure as a service (IaaS) markets further matured, and increased attention went to the platform as a service (PaaS) market to provide a service for building applications in the cloud.


## Wireless wars

**THE COURT** battles between mobile technology players continued to rival their fights in the market, as phone and tablet makers squabbled over patents involving UIs, Siri, headsets and everything in between. Google Executive Chairman Eric Schmidt pondered during a *Wall Street Journal* interview in December why Apple hadn't sued Google yet: After all, it has taken so many Google partners, from HTC to Samsung to Motorola Mobility, to court. Apple did settle a suit with HTC, though Apple and Samsung heated up their relationship with suits and countersuits around the world. ■

MEG WHITMAN and KIM DOTCOM PHOTOS: REUTERS, ANONYMOUS PHOTO: VINCENT DIAMANTE (WIKIPEDIA)

# The biggest and scariest security stories of 2012

## From the FBI/Scotland Yard hack to Stuxnet disclosures it was a busy year for security scoundrels

"There are so many countless, legitimate uses for Megaupload that the piracy element is really just one that is minute and shouldn't even be the primary focus."
— Kim Dotcom

BY ELLEN MESSMER

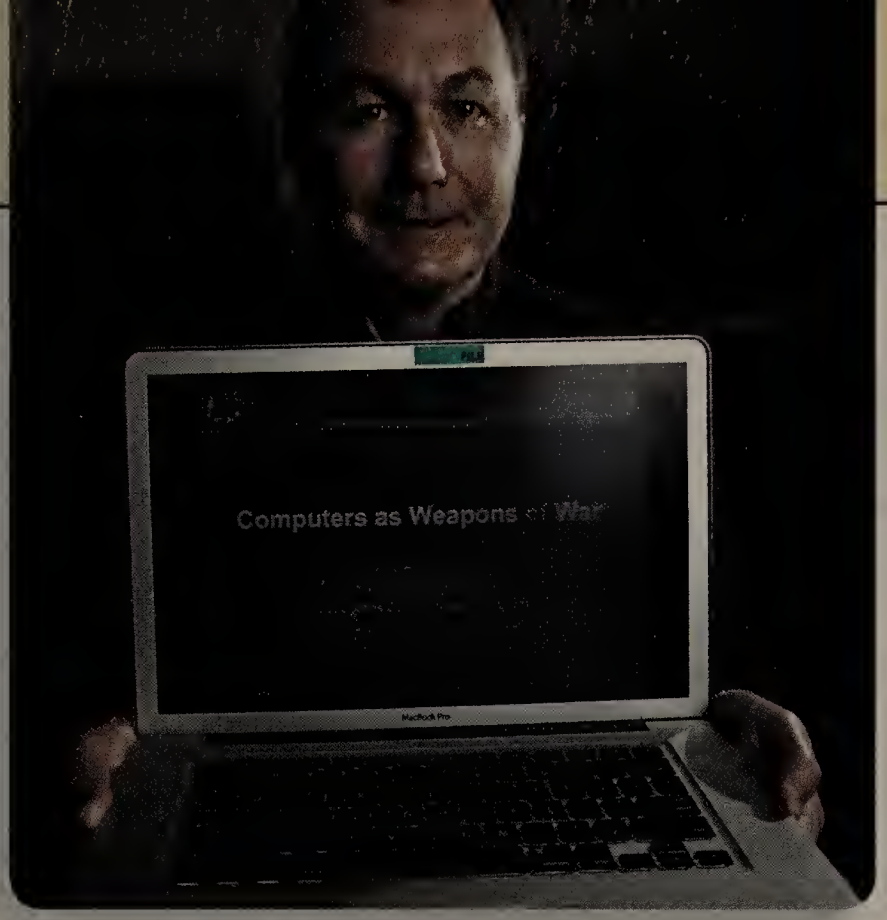
**COULD THINGS** really be this bad? From the embarrassing hack of a conversation between the FBI and Scotland Yard to a plethora of data breaches and other network security malfeasance, it's been a busy year for miscreants. Here we take a look at the bigger security stories of the year.

▶ **Source code used in** older Symantec enterprise security products, Symantec Endpoint Protection 11.0 and Symantec AntiVirus 10.2, as well as older versions of pcAnywhere and Norton Internet Security, was exposed online by hackers calling themselves Lords of Dharmaraja with a leader named Yama Tough in Mumbai.

The gang claimed to obtain the code from a third-party associated with the Indian military. Symantec, acknowledging the authenticity of the source code, also said the security firm had been subject to the hackers vainly trying to extract an extortion payment of about $50,000 in exchange for not posting the stolen code. Symantec engaged in a cat-and-mouse game to catch them, with help from law enforcement— but so far without apparent success. Later in the year Symantec inadvertently crippled a large number of Windows XP machines when it shipped customers a defective update to its antivirus software. The security firm acknowledged the problem that impacted users of its Endpoint Protection software.

▶ **The year started off** with the FBI raiding the cloud file-sharing and storage Megaupload site, based in Hong Kong and founded by 38-year-old New Zealand resident Kim Dotcom, on content piracy charges to the tune of $175 million. And that action, supported by the U.S industries which hailed it as bringing down a big fish that was devouring their intellectual property, has triggered a year's worth of lawsuits and retributions from all even remotely involved. It turned confrontational when outraged users of Megaupload were invited by hacktivist group Anonymous to attack law enforcement and industry websites supporting the raid by downloading do-it-yourself denial-of-service software such as Slowloris.

▶ **Hackers in the LulzSec** group associated with the broader Anonymous movement found the tables turned when they were arrested by the FBI and European law-enforcement agencies — and it was LulzSec leader Hector Xavier Monsegur, alias "Sabu," who turned in his friends as part of a deal to work as a stooge for the FBI after being arrested in New York City last year. By the




**ABOVE:** John Bumgarner, a cyber-warfare expert who is CTO of the U.S. Cyber Consequences Unit, claims he has linked the Stuxnet computer virus that attacked Iran's nuclear program in 2010 to Conficker, a mysterious worm that surfaced in late 2008 and infected millions of PCs.

end of March, LulzSec claimed to be "reborn" and took credit for hacking a dating website for military personnel, MilitaryS-ingles.com, leaking more than 160,000 account details from its database.

▶ **During a conference call** the FBI was having with its agents and law-enforcement officials overseas at Scotland Yard, cybercriminals hacked their way into the phone conversation, recorded it and posted it online. The conversation was about hackers facing charges in the U.K. The group Anonymous took credit for the intercepted call. The FBI said it appeared likely the cybercriminals may have hacked into a law-enforcement official's email to get the information for the conference call dial-in.

▶ **Microsoft decided to temporarily** stop publishing new apps for Windows Phone on Marketplace due to an issue associated with digital certificates used to sign apps that prevented some phones from installing some apps for a few days.

▶ **Yahoo accidently leaked the** private key that was used to digitally sign its new Axis extension for Google Chrome. Axis is a new search and browsing tool from Yahoo. Security blogger Nik Cubrilovic discovered the package included the private crypto key used by Yahoo to sign the extension, noting it offered a malicious attacker the ability "to create a forged extension that Chrome will authenticate as being from Yahoo." Yahoo was forced to release a new version of its Axis extension for Google Chrome after that.

▶ **NASA disclosed how a** stolen laptop taken Oct. 31 from a locked car contained "personally identifiable information" on a large number of NASA employees. Although password-protected, the laptop didn't have whole-disk encryption, according to the email to NASA employees from Associate Deputy Administrator Richard Keegan, who gave orders to ramp up disk encryption at once.

**The New York Times** article asserting that the cyber-weapon Stuxnet is a creation of the U.S. with Israel, and was launched in a covert action authorized directly by President Barack Obama against an Iranian facility suspected of developing a nuclear weapon, has stirred up a firestorm of controversy in Washington about leaked information. Now that another cyber-weapon for espionage, Flame, has been discovered and linked directly with Stuxnet, there's more concern with the United Nations' International Telecommunication Union warning countries that Flame is dangerous, and some saying the U.S. is losing the moral high ground as its secret cyberwar efforts become known.

▶ **Google was under the** gun for most of the year. First the Federal Communications Commission fined Google $25,000, asserting the search-engine giant impeded an investigation into how Google collected data while taking photos for its Street View mapping feature. The FCC maintained in a report that Google "deliberately impeded and delayed" the investigation for months by not responding to requests for information and documents. Then Google agreed to pay a $22.5 million fine to settle U.S. government charges that it violated privacy laws when it tracked users of Apple's Safari browser through cookies. In its legal complaint, the Federal Trade Commission (FTC) said Google falsely told Safari users that it wouldn't place tracking cookies on their devices or serve them targeted ads. But instead, Google actively circumvented Safari's cookie-blocking settings in order to track the users, the FTC said.

▶ **Supply chain security problems** got a lot of attention in 2012. "Backdoors, malicious software and other vulnerabilities unknown to the user could enable an adversary to use a device to accomplish a variety of harmful objectives, including the exfiltration of sensitive data and the sabotage of critical operations," stated one government agency on the growing problem. Researchers at the Defense Advanced Research Projects Agency (DARPA) came up with the Vetting Commodity IT Software and Firmware (VET) program which will develop systems that can verify the security of commercial IT devices. More such programs could be in the future.

▶ **Printers manufactured by Samsung** have a backdoor administrator account hardcoded in their firmware that could enable attackers to change their configuration, read their network information or stored credentials and access sensitive information passed to them by users, the U.S. Computer Emergency Readiness Team (US-CERT) said. ■

JOHN BUMGARNER PHOTO: REUTERS/LOU DEMATTEIS, STEVE BALLMER PHOTO: JOHN ADKISSON / REUTERS

# MICROSOFT

## What it did right and wrong in 2012

BY TIM GREENE

**AT THIS** writing Windows 8 could be the biggest thing Microsoft has done wrong — ever. But it could also wind up being one of the best things it has ever done.

By CEO Steve Ballmer's own description it is one of the top three major events in the company's history, grouped with IBM PCs adopting MS-DOS and the advent of Windows 95.

By that measure, if it's a flop it's huge.

Windows 8 drives users crazy. It's a two-headed operating system that supports the traditional Windows keyboard-and-mouse interface as well as a touch-centric UI that many say is baffling, at least initially.

Then toss in a separate version of Windows 8 called Windows RT. It's a hardware/software bundle based on ARM processors that doesn't support traditional Windows x86 apps — only so-called Windows Store applications that rely mainly on touch. Confusion reigns.

So what was Microsoft thinking?

Windows 8 is designed to tap into the shift in demand away from traditional desktops and laptops and toward phones and tablets.

Core to this strategy is making a shift to mobility and creating an application environment transferable from device to device. The advantage: Massive blocks of code from an application written for Windows 8 can be readily repurposed for apps written for Windows Phone 8 — making it feasible for these apps to be available on any Windows device.

Because Windows Store apps are written primarily for touch, their navigation is similar from tablet to notebook to phone. Applications are available for phones, tablets and laptops, and if you master them on one category of device, you've mastered them for all.

"It will take 10 or more years before most organizations completely transition to WinRT technology, which, if successful, will represent the next 20 to 30 years of Windows," says Gartner in its report "Windows 8 changes Windows as we know it."

Beyond Windows 8, Microsoft has scored some hits and some misses this year with new product acquisitions. Here are four of each.

## RIGHT

**Buying Yammer:** Microsoft spent $1.2 billion this year to buy Yammer as a way to beef up social networking and collaboration in its SharePoint, Office, Dynamics CRM, Lync and Skype platforms.

When its integration is completed over the next few years Yammer will add tracking of conversation threads and enterprise search to these applications, aggregate news feeds, manage documents and unify user identities.

Yammer is already available with Microsoft's Office 365 cloud offering and will gradually permeate the company's other collaboration and productivity platforms, the company says.

With the purchase Microsoft has bought the tools it needs to set itself up well in support of new ways corporations do business using tools that end users have become familiar with via their use of consumer social networks.


Yammer CEO David Sacks (L) and Microsoft CEO Steve Ballmer shake hands in San Francisco, June 25, after announcing Microsoft will acquire Yammer for $1.2 billion in cash.

**Windows Server 2012:** Microsoft's latest version of Windows Server is to be applauded for how it simplifies many areas of virtualization, which leads *Network World* reviewer Tom Henderson to write, "What the Windows 2012 Server editions provide is a compelling reason to stick with Windows infrastructure, as many of the advances represent integration of management components that have no competitive parallels."

The software streamlines live migration of virtual machines for reasons of preventing performance of one instance degrading because it is overwhelmed by demand. Windows Server 2012 removes the need for designating failover clustering ahead of time and a separate SAN to share storage among instances that were required in Windows Server 2008.

Windows Server 2012 also offers replication of virtual machines asynchronously. Called Hyper-V Replica, the feature is ideal for replicating VMs from site to site over limited WAN links.

A new feature called Storage Spaces treats hundreds of disks as a single logical storage reservoir and ensures resiliency by backing up data on at least two physical disks. The feature sets aside a designated storage area — called a space — for a defined category of data within the entire available disk capacity — called a pool.

Storage Spaces can allocate a space that is larger than the actual available physical capacity of the pool that the space is carved out of via thin provisioning. This

keeps data from overflowing the space by freeing up capacity whenever files are deleted or an application decides that such capacity is no longer needed.

Windows Server 2012 also enables managing servers in groups and includes an automated tool to periodically check for proper server configuration.

**System Center 2012:** This management suite offers new tools to better handle closely related cloud environments and virtual data centers, and has expanded the products it can manage to include some of the virtual environments of rivals Citrix and VMware.

The platform includes broad support for managing smartphones based on Microsoft's phone OS, but also those from Apple and from a range of vendors that base their phones on Android.

The Virtual Machine Manager, Orchestration Manager and Operations Manager can combine to make management of virtual environments simpler. For instance, the management suite streamlines configuring virtual machines to pick up the function of others when they go down so help desk workers can perform the task without escalating.

In a practical sense, System Center can give developers the capability to create and tear down virtual machines for their test environments within parameters set by network executives.

One downside is that upgrading to System Center 2012 requires a lot of network prep as well as education to learn what other Microsoft products are required in order for the various modules to work.

**Targeting botnets:** Microsoft did itself proud this year disrupting the Nitol botnet with a combination of technical and legal innovation, as well as seizing servers belonging to the worst instances of the Zeus botnet.

These efforts represent the fourth and fifth times Microsoft has intervened to shut down or a least temporarily cripple criminal malware enterprises.

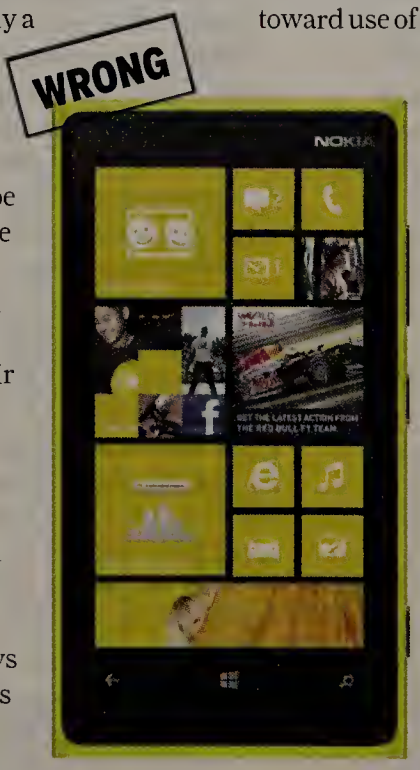
The company's Digital Crimes Unit (DCU) started its aggressive action in 2010 and continued steadily since then. While its work won't halt online abuses, its proven commitment to causing periodic significant damage to them does make criminal activity more difficult, and that steady opposition helps raise the bar for criminals hoping to enter the game.

The effort sends a message to other criminals that Microsoft might strike them at any time, says Richard Boscovich, assistant general counsel for the DCU.

# WRONG

**Euro browser flap:** Microsoft failed to live up to an agreement that it would display a Windows screen giving users the option to pick Internet Explorer or some other browsers.

While Microsoft says the problem was caused by a technical glitch and has worked to correct it, it's still facing down a possible $7 billion fine from European Union regulators. While Microsoft would likely survive the hefty penalty, it's really a case of the company shooting itself in the foot. It is also damaging its reputation in not only Europe where customers were directly affected, but worldwide where end users heard about the case and adjusted their opinion of the company accordingly.




**Windows Phone:** The launch of Windows Phone 8 this fall revealed an operating system that met with generally good reviews and a phone — Nokia's Lumia 920 — that shows it off to good advantage.

The problem here is that it comes so late after the iPhone and Android phones have dominated the market. The company must now dedicate itself to a long-term effort to scratch its way up from 2.6% of the market, according to IDC estimates, to something more significant.

IDC thinks Microsoft will succeed in that goal by claiming 11.4% of the market in 2016 -- a terrific boost. But the company leaves a lot of smartphone money on the table by coming out so late with a compelling product.

Windows Phone 8 itself may pan out to be a winner, but the overall handling of Windows Phone to date racks up as a loss. And with Microsoft's desire to link all its mobile platforms, a slow start for Windows phone hobbles that larger effort.

**Licensing hikes:** Microsoft boosted by 15% the fees it charges for licenses that allow users to access servers, squeezing more money out of customers while still giving them a better deal than the alternative.

This is likely good for Microsoft because it means more revenues, but it's just another reason for business customers to carp about being gouged for software.

Corporate employees are moving toward use of multiple devices in the workplace, making licenses based on numbers of users attractive rather than licenses based on individual devices. Even with the price hike, many customers will wind up paying less for user client access licenses than for device CALs. But that won't eradicate the bad taste from their mouths.

**Fanned Flame:** The complex Flame espionage malware that infected Iranian government computers earlier this year was in part enabled by a Microsoft security snafu.

A key element of Flame called for exploiting weaknesses of the MD5 hashing algorithm. Microsoft had urged in 2008 that network administrators and certificate authorities stop using the hash because researchers had discovered how to exploit it. ■

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# 13 events that defined Cisco's 2012

From software-defined networking challenges to killing Cius and corporate restricting moves, it was a busy year for Cisco.

BY JIM DUFFY

## January

**IN JUST** over two years since Cisco started shipping its Unified Computing System (UCS), the company announces that it has landed more than 10,000 customers for the server platform. UCS began shipping in July 2009 and it is now on an annualized order run rate of over $1 billion, Cisco says. Cisco is No. 4 in the overall server market after three years in the business, No. 2 in x86 blade servers in the U.S. and No. 3 worldwide, according to CEO John Chambers.

## March

**CISCO MAKES** its most strategic acquisition in years when it buys video software titan NDS for $5 billion. The acquisition is in keeping with Cisco's strategy to drive video into as many markets as it can in order to create demand for its routers and switches. But the NDS deal is more than that. Cisco has made no bones about the fact that it is looking to deepen its software and services expertise in order to drive more revenue streams for the company and grow in areas aligned with its router and switch hardware focus. Software is 80% of NDS' revenue and the remainder comes from integration services.

## April

**CISCO CONFIRMS** previous reports that it is funding Insieme Networks, a potential spin-in startup developing products to help stock Cisco's nascent programmable networking lineup. Cisco invests $100 million in Insieme, which is led by three Cisco engineers: Mario Mazzola, Luca Cafiero and Prem Jain. The three led two other Cisco spin-in startups — Andiamo Systems, which made storage-area network switches, and Nuova Systems, which developed Cisco's Nexus 5000 series data center switches. Cisco says it has the option to buy Insieme for $750 million to $850 million, and the company is believed to be developing 100G programmable switches with a significant storage component, and a controller.

## May

**CISCO KILLS** its Cius business tablet less than a year after it started shipping, citing an inability to compete with workers using their own personal devices for business — such as Apple's iPad — and the cloud. Indeed, Cisco's own internal BYOD practices helped doom Cius. The company instead will focus on software offerings like its Jabber and WebEx products for more popular tablets and smartphones supporting a variety of operating systems. And Cisco's strategy for doing so will be led by its third collaboration head in less than a year, after Cisco's collaboration business has been hampered by execution issues and declining sales. The business was flat in Cisco's 2012 third quarter with TelePresence hit by decreased spending in public sector and enterprise. In the fourth quarter, collaboration saw an 8% decline, which was repeated in the first quarter of fiscal 2013.

## June

**CISCO ENDS** the suspense surrounding its software-defined networking strategy by unveiling the Cisco Open Networking Environment (ONE), a set of APIs to enable its routers and switches to be programmable through software. Cisco ONE is designed to make Cisco products flexible and customizable to meet the needs of cloud, mobility, social networking and video.

JOHN CHAMBERS PHOTO: ADNAN ABIDI / REUTERS

In addition to APIs, it includes agents and controllers, and overlay network technologies designed to make each layer of a network — from the transport layer up through the management and orchestration layers — programmable in order to make it adaptable and extensible to changing needs. This differs, Cisco says, from more commonplace approaches to SDNs in which the control plane is decoupled from the forwarding plane and OpenFlow is used as an API, agent and protocol to command switches from an external controller.

**CISCO ANGERS** customers when it upgrades firmware, without request or permission, on Linksys routers that pushes users toward a cloud-based administration service they don't want. What's more, Cisco's privacy policy for the cloud-based administration states that it may keep track of certain information related to how customers use the service, such as how much traffic is going through the router every hour and information on the Internet history from the home network. The policy states that Cisco may share aggregated or anonymous user experience information with service providers, contractors or other third parties. After a prolonged outcry from users, Cisco admits the exercise was a mistake.

## July

**CISCO CUTS** 1,300 jobs, or 2% of its workforce, in a "limited restructuring" to realign resources and streamline its organizational structure. The reductions are said to hit Wide Area Application Services (WAAS) sales and engineering, as well as public sector operations and Advanced Services. The cuts are followed by the resignations, in the same week, of Paul Mountford, head of Cisco's global enterprise sales, and Amanda Jobbins, vice president of global partner marketing. They both are from the U.K. and both held their most recent positions at Cisco for less than two years.

**CRACKS START** to appear in the 3-year-old VCE data center coalition between Cisco, EMC and VMware. VMware buys network virtualization startup Nicira for $1.26 billion, ushering VMware into software-defined networking for the data center, and increasing competition and straining relations with longtime partner Cisco. The acquisition comes a mere five weeks after Cisco rolled out its own Cisco ONE programmability strategy. Reports surface that VMware even outbid Cisco for Nicira. And later, EMC would line up Lenovo as a server partner, putting additional pressure on Cisco as a server partner in the VCE coalition.

## September

**CISCO KILLS** its Application Control Engine (ACE) application acceleration product after years of beat down from competitors F5 and Citrix, and loss of more than half of its market share since 2008. Several competitors offer trade-in programs to entice ACE customers, and Cisco ultimately announces a reference sale agreement with Citrix to fill the ACE-in-the-hole with Citrix NetScaler for cloud-based application performance requirements.

**CISCO CEO** John Chambers hints at retirement and possible successors. Chambers suggests his time might be up in two to four years, and that 10 possible successors from within the company could replace him, including Rob Lloyd, executive vice president of worldwide operations; Chuck Robbins, senior vice president of the Americas; Edzard Overbeek, senior vice president of global services; and COO Gary Moore, who would assume leadership of Cisco if Chambers gets "hit by a bus." Later, Moore and Lloyd are named co-presidents of the company, perhaps an indication of the succession order.

## October

**CISCO CUTS** ties with Chinese partner ZTE, after an internal investigation indicates ZTE sold Cisco equipment in Iran despite U.S. sanctions forbidding such sales. The move coincides with a U.S. Congressional report encouraging American companies to cease doing business with Chinese telecom vendors such as ZTE and Huawei due to national security concerns. The moves ignite a war of words between Huawei and Cisco, leading to speculation of an impending trade war between Cisco and other U.S. technology companies, and China.

**CISCO CUSTOMER** California State University accepts a $22 million bid from Alcatel-Lucent to refresh its systemwide network after Cisco's proposal overshoots that by $100 million. The contract covers all 23 CSU campuses, but San Jose State decides to go with Cisco anyway, handing the company $28 million for its "Next Generation Technology Project" without a competitive bid. The situation raises questions on San Jose State's motivation and the inner workings of the deal, considering the challenging financial situation facing the state of California and that SJSU is spending more for its own network than CSU is spending to upgrade the entire university system.

## December

**CISCO CEO** John Chambers discloses — again — that Cisco intends on becoming more of a software and services company. The company plans to double its revenues from software over the next five years from $6 billion to $12 billion. At the same time, Cisco also discloses — again — that it's intent on becoming the No. 1 IT vendor in the industry. Both pronouncements are made at the company's Financial Analyst Conference in New York on Dec. 7. The new news from the conference is the unveiling of a new global ad campaign, pushing Cisco's "Internet of Everything" theme. ■

**From:** Network World Daily News AM Alert [mailto:nww_newsletters@newsletters.networkworld.com]
**Subject:** Gigabit cell phone standard nears completion

Disk or tape? How about both | Cisco's moment of truth

# Network World Daily News AM

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## Gigabit cell phone standard nears completion

The world's top handset makers are meeting this week to finalize a version of an advanced mobile communication standard that would raise data transfer speeds to 1Gbps, an event organizer said on Monday. **Read More**

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**In this Issue**





## Disaster recovery trial by fire... literally

On a Sunday morning last year, John Brooks received news no one wants to hear. There'd been an electrical fire in the basement of a New York City office tower - where his law firm has an office. **Read More**

TOOLS

# Poor timepiece, great calculations

**Well folks, Christmas is once** more upon us and I just received a present . . . from myself. Some months ago I saw a project on Kickstarter that I thought was kind of cool so I backed it: the Cookoo watch from ConnecteDevice.

Mark Gibbs' Gearhead

Conceived of as an extension of your iPhone or iPad, the Cookoo watch is intended as a notification service for incoming and missed calls, calendar alerts and Facebook events, and it will also warn you when your iDevice's battery is low or the device is physically out of range.

The Cookoo features a "command" button that you can associate with various functions. A short, medium or long press of the button, for example, can represent a Facebook check-in or a geolocation tag, or trigger your iDevice to take a picture.

The Cookoo watch uses Bluetooth 4.0 Smart, a low-energy Bluetooth connection that doesn't overly tax the battery. But this makes the watch compatible with only the iPhone 4S, iPhone 5, and third- and fourth-generation iPads.

Now, there's one big reason why this product is, in reality, a tough sell: Who wears watches any more? Ah, you might say, doesn't the extra functionality make it useful and worth wearing? Alas, it turns out that it doesn't.

To check in to Facebook or drop a location pin on a map, I don't need to wear a watch, I can pretty swiftly pull my phone out of my pocket. As for notifying me of incoming calls and status events, the Cookoo watch needs to be louder (its alert sound is a miserable "cheep" that would embarrass any self-respecting cricket), and its vibration alert is so weak it's absorbed by the functional but clunky rubber wrist band.

The look of the Cookoo watch isn't too bad (it's sleek and well-proportioned, albeit thicker than I'd like), but the black on black watch with blue accents I received is readable in only bright light while the backlight is an anemic glow that is only useful when there's hardly any light at all.

In short, I am very disappointed. While I'm impressed that the company managed to get a somewhat ambitious product to market, it's not what I hoped it would be. What I hoped was going to be kind of cool and useful turns out to be kind of lame and not really useful at all. For $129 the Cookoo watch gets a Gearhead rating of 1 out of 5 and I'd like my money back (alas, refunds aren't available to Kickstarter backers).

Enough of being the Grinch! Let me give you a present that's incredibly geeky: Wolfram Mathematica 9.

Mathematica has always been an extraordinary product, but this version adds an incredible list of enhancements, including 3D volumetric imaging, image processing (including face detection, feature tracking and image classification), and full client-side Web access for data exchange via Web APIs and asynchronous connections for AJAX-style programming.

Most intriguingly, M9 includes Social Network Analysis! This feature allows you to import data from Facebook and Twitter and, through high-level functions, detect communities, cohesive groups (including cliques, clans, clubs and plexes), centrality and prestige, among other slicing and dicing of social media data.

Mathematica 9 is a staggeringly huge product that I'm just beginning to get into. Priced starting at $295 for the Home version and $2,495 for the Standard version, there's nothing like it and so, Merry Christmas Wolfram! Mathematica gets a Gearhead rating of 5 out 5! ■

*Gibbs is bracing himself for holiday cheer in Ventura, Calif. Send your season's greetings to gearhead@gibbs.com and follow him on Twitter and App.net (@quistuipater) and on Facebook (quistuipater).*

The Cookoo watch was kind of lame and not really useful.


GADGETS

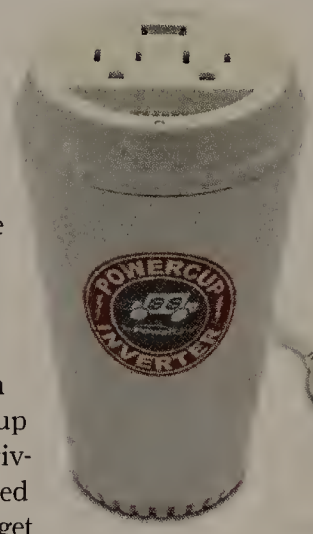
# The Coolest Tools of 2012

Keith Shaw's Cool Tools

**WITH THE LAST** column of the year, instead of doing some additional reviews I wanted to present a list of my favorite devices/gadgets that I tried during the year. If you still haven't completed your holiday shopping yet, there's still some time left to try and grab one of these.

► **Brinno TLC200 time-lapse camera ($200):** If you have a great idea for a time-lapse or stop-motion video, you really need to pick up this camera, which quickly and easily lets you record video at set time intervals (a frame every second or three, or maybe a minute or longer) to create a time-lapse video. You can then quickly import the file into other videos or upload to YouTube on your own. An optional stop-motion shutter lets you create videos like Lego animation or claymation-type videos, if you have the time and patience.

► **Amazon Kindle Fire HD ($199):** For the longest time I've been clearly in the Apple iPad camp — many other tablets came and went, but the iPad always held strong in my heart (and the hearts of my kids). But the Kindle Fire HD was able to squeeze some additional space in there, and it also changed my opinion on e-readers (I now enjoy reading books with a smaller, 7-inch tablet rather than a larger, 10-inch version). The UI of the Kindle Fire HD, which focuses on a user's content rather than apps, makes it easier to quickly access that content than the app-based iPad.




► **PowerCup 200 Watt Inverter ($35):** I'm still in love with this device, which keeps my iPhone powered up and connected while I'm driving to and from work. Shaped like a cup of coffee, this gadget sits in your car's cup holder and lets you power up a USB-enabled device (if you have the cable) and also can power other devices (like your computer) via a regular power outlet. As long as you don't mind giving up a cup holder space, this gadget is a must-own for anyone with long commutes or people who work out of their cars.

► **Verizon Jetpack ($50, with two-year agreement and online discounts):** Getting reliable and fast Internet speeds while traveling is still a pain in the you-know-what. Unless you have one of these units, which can quickly access Verizon's 4G LTE wireless network, providing for excellent download and upload speeds (for content creators, upload speeds are more important than content consumers). The easy-to-use nature of the device makes it a must-own for mobile workers.


► **Samsung Galaxy S III smartphone ($200):** I still own an Apple iPhone 4, but the performance, design and style of the Galaxy S III is seriously tempting me to switch to Android for my next smartphone. My wife now owns an S III and I haven't heard her say a single bad thing about it, unlike several other smartphones and cellphones that came before.

With the Consumer Electronics Show starting in a few short weeks, we're already focused on what the Coolest Tools of 2013 will be. Have a great holiday season everyone, and hopefully the world won't end on Dec. 21 because of those crazy Mayans! ■

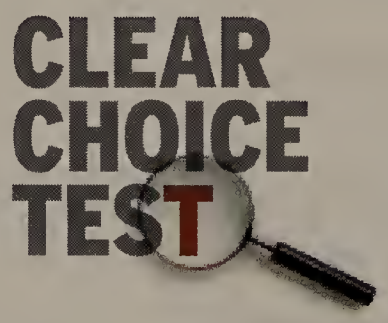
*Shaw can be reached at kshaw@nww.com.*

SINGLE SIGN-ON

# Single sign-on moves to the cloud

## Okta, OneLogin score high in test of 8 SSO solutions that beef up app security

BY DAVID STROM




We are awash in passwords, and as the number of Web services increases, things are only going to get worse. Trying to manage all these individual passwords is a major problem for enterprise security. Many end users cope by reusing their passwords, which exposes all sorts of security holes.

One solution is a single sign-on (SSO) tool to automate the logins of enterprise applications and also beef up password complexity, without taxing end users to try to remember dozens of different logins.

SSO isn't new; we have had various products for more than a decade. What is new is that several products now combine cloud-based SaaS logins with local desktop Windows logins, and add improved two-factor authentication and smoother federated identity integration.

Also helping is a wider adoption of the open standard Security Assertion Markup Language (SAML), which allows for automated sign-ons via exchanging XML information between websites.

The SSO market includes more than a dozen products, offered by companies ranging from boutique shops to large software vendors. We tested eight products: SecureAuth, OneLogin, Okta, Symplified, Intel's McAfee Cloud Identity Manager, Numina Application Framework, SmartSignin and Radiant Logic's RadiantOne. Several other SSO vendors were contacted but decided not to participate, including IBM, CA Technologies, Oracle and Ping Identity.

The products all work in a similar fashion. First, they connect to one or more directory services, such as Active Directory, or an identity provider with an existing collection of users, such as Google Apps. They grab the user lists from these sources and then apply various rules in terms of what applications each user can access and whether they make use of advanced passwords, such as multifactor or one-time tokens to log in to each app.

Users typically sign in to a Web-based portal, or the products grab their Windows desktop login credentials and use that as the basis for the authentication of the SSO app portfolio. This means that users don't have to remember or even in some cases need to know what their Google or Box passwords are to gain access to these apps.

It sounds simple, but there is a great deal of behind-the-scenes software magic to make all the logins operate seamlessly and to connect the dots among the different pieces. And all of the user data "grabbing" should happen over encrypted connections to prevent man-in-the-middle and other attacks.

### Trials and pricing

Most of the vendors we tested offer free trial accounts with certain limitations beyond the two weeks' time frame, so you can get a feel for how they operate. And vendors are very willing to work with your own collection of apps to ensure that their products cover the ones you want to automate the sign-ons for. Some offer enticements such as unlimited number of users for a single app to deploy across your organization and get your end users used to the SSO apparatus, and then they start charging when you add new apps to the portal.

Vendors have somewhat different plans for their products. Some charge per user per month, others have more standard per-server site licensing fees. Some include live support for at least the regular workday, others only have online support and charge extra for live help past normal working hours. Some have different levels of pricing plans that cover a limited number of directory linkages, apps or policy roles, and charge extra when you exceed these limits. Almost every vendor had incomplete pricing information published on their website, although SmartSignin's pricing

## NETRESULTS

| Product | On-premise or cloud (1) | Identity providers | Application connectors | Pricing |
|---|---|---|---|---|
| **McAfee Cloud Identity Manager** | Both | Cloud: Active Directory (AD) in beta; more for on-premise version | 120+ | $1-$5/user/month |
| **Numina Application Framework** | On-premise | LDAP, OpenID, Google | 100+ | $25,000/server |
| **Okta** | Cloud | AD, Google, Salesforce, others | 1,000+ | $1-$10/user/month |
| **OneLogin** | Cloud | AD, Google, OpenLDAP, Workday | 1,500+ | $1-$7/user/month |
| **Radiant Logic** | On-premise | AD, OpenAM, Azure, SecurID | <10 | $25,000/server |
| **SecureAuth** | On-premise | AD, Lotus Notes, OpenLDAP, Novell eDirectory | 1,500+ | $1.60/user/month, plus server fees |
| **SmartSignin** | Both | AD, Google, Salesforce | 50+ | $4-$9/user/month |
| **Symplified** | Both | AD, Google, LDAP, Salesforce, others | 200+ | $3/user/month, plus startup fees |

(1) McAfee, Symplified and SmartSignin have two separate product offerings.

page was superior. SecureAuth has the most complex pricing scheme.

All this makes comparing and calculating the cost of a total SSO rollout difficult. Also know that these products aren't cheap: Plan on spending multiple tens of thousands of dollars annually for them, even for a relatively small installation. We have put together our best guess at what it would cost for a 500-seat installation for the first and subsequent years; some vendors' fees drop significantly in the outlying years. The reason we call it a guess is that, given the way prices aren't published online, it is clear that vendors often give discounts to get your business.

## Cloud and on-premise winners

Two vendors rose to the top in our testing: Okta and OneLogin. Both were flexible, had great app and browser support, and handled sign-ons for the widest variety of situations. These are mostly cloud-based products. The two best on-premise products were SecureAuth and McAfee.

Numina and SmartSignin are both from very small companies that are trying to break into the SSO space, and generally speaking need more work and polish. But Numina has superior reports and the nicest SAML settings sheets of any of the products, making it easier to set up websites that support that protocol. And SmartSignin has the most serious approach to keeping user data private of the products tested.

RadiantOne has very limited app support and its documentation could be better. On the other hand, RadiantOne and Symplified have impressive identity architectures that can handle a wide variety of situations, useful in cases where companies want to merge and still keep separate Active Directory forests, for example.

The subtleties with these SSO products can be daunting. For example, McAfee's SSO product supports Adobe's EchoSign document signing service, but accounts must have their own subdomains for the SAML magic to work properly. The same is true for Box and Verisign's VIP token service for Okta: You need the full enterprise account with subdomains enabled. So if you are trying to support users who already have their own individual accounts on these services, you might run up against problems.

Logins can be further protected with multiple-factor tools. These take the form of various hardware or software-based tokens. OneLogin and Okta have the widest multifactor authentication support, including their own iPhone soft token apps, RSA's SecurID, SMS text messages, Vasco tokens, Yubico YubiKey and browser certificates. This important because by using one of these tokens, you strengthen all of your associated logins through the SSO process, without having to constantly find a different multifactor token for each individual login circumstance.

However, each product employs multifactor tokens somewhat differently. Okta, Radiant Logic and OneLogin use it to protect the entire user's account while McAfee, Symplified and SecureAuth can protect individual apps.

Speaking of multifactor tokens, there are additional issues. One of our test accounts was with PayPal using its supplied SecurID token. In order for any of the SSO products to log in automatically to our account, we would first have to remove this token requirement. Some of the other SaaS services that use multifactor authentication, such as Google Apps and Facebook, might also need similar treatment to work with some of the SSO services.

Another thing to look at is how each product recovers from mistakes that you make in specifying the various login parameters. Given the amount of information that each product requires to enable SSO, it is easy to make small mistakes that can take time to find and correct. You will need to iterate back through the login process of the SSO in your own testing, to ensure that actual users can access their apps, and then make changes with the configuration screens in the management interfaces. Some, such as Okta, are particularly a problem here. This means if you test any of these SSO products on your live network, be careful. If you have set up your Active Directory failed login policy to lock out users after a small number of attempts, you might run into trouble while you are testing these products.

## McAfee Cloud Identity Manager

Intel has rebranded its Cloud SSO offerings as part of its McAfee division, and it sells two versions: one cloud-based, which is newer and has fewer features, and one that installs on-premise.

The cloud version has fewer applications connectors; for example, it doesn't support Office 365 yet. And the cloud version's Active Directory integration is in beta at the moment. The cloud offering is based on the Force.com platform and there are no browser plug-ins needed.

The older on-premise version from McAfee has probably one of the largest collection of identity providers of any product we've seen, including AD, LDAP, Google, OpenID, Salesforce and various SQL databases.

One of the interesting things is how flexible and complex the product can be: You can set up separate policies for particular apps that connect to particular identity providers, and add two-factor authentication for just specific apps. If you are in need of its sophisticated policies, you probably want to only look at the on-premises version because it can do a lot more than what is offered in the cloud product.

As an example, you can restrict logins per app by IP address range, to specific mobile devices, and by day of the week and time of day. All of these settings are collected into one place for easy configuration.

Both McAfee products allow for just-in-time user provisioning, provided you have set things up correctly and exchanged the necessary digital certificates between McAfee and the intended SaaS app.

The online cloud documentation is rather sparse but the printed manuals go into more detail on how to set up both Google and Salesforce accounts on their service.

For both products, McAfee has one of the simplest pricing models around, albeit one that isn't published on its website. Everything is included in the per-user subscription fee, which starts at $5 per user per month and drops to $1 in quantity and over multiple years.

And by everything we mean live 24/7 support, as many application connectors or identity providers as you desire, and unlimited roles and policies. So pricing for 500 users would be $18,000 for one year. A three-year contract would drop the cost to $13,300 per year.

## Numina Application Framework

Numina has the smallest feature set of the products we tested. It is more of a developer's toolkit than a fully complete product. It comes with both on-premise pieces — mainly a Web service that runs on an IIS server — and a cloud piece. Unlike most of the other products in this review, it doesn't offer two-way synchronization with Active Directory or LDAP directories; it can only update its own user accounts. It also supports OpenID authentication methods.

Setting up an app that supports SAML, such as Google Apps, is very straightforward and the information to share with the corresponding fields on Google's Web form is clearly displayed.

One limitation with SAML is that the user ID that Numina uses must match the ID that the app provider requires. This could be a big issue if you are going to use it to log in to a lot of different SAML apps. The other products allow for more flexible configuration.

Numina supports a single multifactor authentication — SMS text message — although there are plans for more. However, it excels in the number of reporting choices, something the far more feature-rich products should take a closer look at.

Numina has a very simple pricing scheme, based on a single server license, so our sample 500 seats would cost $25,000 for the first year and a $5,000 maintenance fee for subsequent years.

## Okta

Okta has been in the identity management business a long time, and it shows. It has mostly a cloud-based service with several pieces that are installed on your network, including browser plug-ins. There are clear workflow diagrams showing what you need to finish your tasks, and separate tabs for setting up apps and users and running reports. This is one of the best features of the product.

Okta has the ability to support two Active Directory connectors to the same directory store for redundancy. When you set these up they are read-only, but you can quickly turn on two-way synchronization. The Active Directory connector has its own user interface and monitoring application, and can be run from any Windows server. There is also a separate piece of software to handle the desktop Windows login integration that needs to be installed on an IIS server.

The product also has wide multifactor authentication support, including its own mobile soft tokens, a security question and Google Authenticator. You can enforce the multiple factors when users are outside the corporate network, or for specific groups, but not for specific applications. And you can ask for the multiple factors on a specific time schedule (say once a day) too.

Okta has a rare feature called Just in Time provisioning. This means you can import all your Active Directory accounts and set things up so that when users are ready to start using their SSO solution, it will try to authenticate them with their Active Directory logins and create their accounts on the fly. This can be useful if you are turning on SSO for a large population all at once.

Okta has excellent documentation, with plenty of screencast videos showing you how to set things up. It has a catalog of more than 1,000 apps that have been pre-configured. There is also a table showing browser support that can be reached from the help screens inside the Okta app itself, a nice touch.

Reports show you the last month's worth of app usage and suspicious activities, and how many users have never signed into the system.

The Okta dashboard gives a range of application reports that can show unused apps for particular users. It also has a nice task list showing what you still need to do to on the service, alerts to any apps that weren't set up properly, and other items.

Okta's biggest downfall is how poorly it can recover from errors in the configuration process. Once you select an app you can't actually delete it, just deactivate it. If you haven't set it up properly this can give you fits. Okta claims this is a feature, to aid with its logging capabilities. We disagree.

Okta has several pricing plans, starting at $1 per user per month for basic SSO and moving up to $10 per user per month for enterprise-level features such as user provisioning and more detailed reports. Pricing for 500 users would be $60,000 for the first and subsequent years. Live 12/5 support is included, and there are three additional support plans if you want to go to 24/7 support.

## OneLogin

OneLogin is a cloud-based service with several on-premise pieces including browser extensions, a special IIS-based authentication script that is used for Windows logins, and an Active Directory connector for Windows servers to establish the two-way directory synchronization.

It has one of the largest app catalogs, supporting more than 2,600 apps, and also has the ability to be easily customized for forms-based secure Web authentication by creating custom app connectors. That is a nice touch, because with some of its competitors, you either can't create new app connectors or else you have to wait for the vendor to create them and add to the product.

One unique feature to OneLogin is a new addition called Federated Cloud Search. This makes it easier to find particular content across your entire apps portfolio without having to index each specific site. If you have ever tried to look for a document in one of your SaaS-based providers, you will understand how effective this feature can be. Not all of OneLogin's apps support this feature yet. Like some of its competitors, it also supports just-in-time app provisioning.

Another feature is the ability for an SSO administrator to log in as a particular end user to do troubleshooting, called "assumed sign-in." You have to enable this individually by application, though. You don't need to know the end user's credentials but you can test out the access to a particular app.

The directory synchronization is very easy to set up, and OneLogin supports Active Directory, OpenLDAP, Google Apps and Workday. You can set up rules to map users to particular roles and groups.

Its documentation is awesome with loads of help files on a Zendesk server that has copious

## SCORECARD

| Product | McAfee Cloud Identity Manager | Numina Application Framework | Okta | One-Login | Radiant Logic | SecureAuth | Smart-Signin | Symplified |
|---|---|---|---|---|---|---|---|---|
| Features (25%) | 4 | 2 | 4.5 | 4 | 3.5 | 4 | 2 | 3.5 |
| Cost/benefit (25%) | 4 | 2 | 2 | 3 | 3 | 2.5 | 2.5 | 3.5 |
| Documentation (25%) | 2.5 | 1.5 | 4.5 | 4.5 | 2.5 | 3.5 | 2 | 4 |
| App Support (25%) | 2.5 | 2.5 | 5 | 5 | 1 | 5 | 2 | 3 |
| **Total** | **3.3** | **2.0** | **4.0** | **4.1** | **2.5** | **3.8** | **2.1** | **3.5** |

**SCORING KEY > 5:** Exceptional, **4:** Very Good, **3:** Average, **2:** Below Average, **1:** Consistently Subpar

# NETWORKWORLD
## Tech Connections Research Panel

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screen shots and illustrations on how to set up various services. There's a large selection of reports including all provisioning activities, various ones on user status (suspended, active or whatnot), and a nice report on weak passwords. You can customize each report and download each as a CSV. There are also custom notification rules, so you can email users when they have been locked out of OneLogin, for example.

A wide variety of multifactor authentication methods is supported, including YubiKey, Verisign VIP, FireID, SecurID and OneLogin's own mobile-based soft tokens. It can be required for every login or for unknown browsers, which is not as flexible as some of its competitors. Browser PKI certificates can be required as an additional factor. You can also prevent the browser from caching passwords for applications where OneLogin uses form-based authentication, a nice feature. Finally, it integrates with various SSL VPNs (we didn't test this) and you can specify which apps can be accessed through the VPN gateway.

OneLogin offers several pricing plans, including a free plan for unlimited users with three company apps and limited online support. The $5 per user per month enterprise plan widens this to support unlimited roles and directories but only includes daytime live support; if you want 24/7, that bumps you up to $7 per user. That works out for 500 users to be $35,000 for the first year and subsequent years.

### Radiant Logic RadiantOne

Radiant started in the directory management space and is slowly moving into SSO. Its solution is for on-premise, and has two main pieces: a Virtual Directory Server (VDS) that handles identity federation and a Cloud Federation Service (CFS) that handles applications.

CFS requires VDS to work: Think of VDS as handling the authentication of the user's identity, then CFS contains a bunch of secure tokens that can access your various apps. It isn't as elegant as the other vendors, but it can be flexible if you understand which piece of software does what. There are a few other tools to set up the integration and deployment, such as the Radiant Trust Connector that handles the Windows desktop logins and the CFS Deployment Manager that does what its name says. Everything runs on Windows Server 2008 R2 with at least IIS v7.5 and .Net Framework v4, and goes under the name of RadiantOne.

That is a lot of different pieces to keep track of. Each piece has its own printed

## What to look for in a single sign-on product

Each SSO service has four basic features:

**1.** There's the single sign-on activity itself, the ability to automatically log in to a particular SaaS-based website or on-premise server. There are several methods for accomplishing this; one is using a secure Web authentication script that sends a username and password to the Web server to accomplish the login. This requires the SSO product to manually manage the login string. If you decide to change your password for your online banking site, for example, you have to remember to change it in the SSO tool as well. A second, and more elegant, method is to use one of the identity standards such as OpenID, Web Services Federation or SAML. Not every SaaS site supports these standards, but more are getting on board every day as a result of the popularity of the SSO products.

Automating sign-ons is just one half of the equation. If you want all of your users at once to have enterprise Google Apps accounts, you also need to be able to initiate provisioning from the SSO product, otherwise you are going to be in for some tedious times. Not every SaaS vendor supports automated provisioning from every SSO product.

This is where a third authentication method comes into play: exchanging site certificates between the SaaS provider and the SSO vendor. While this is initially cumbersome, it can make the process go faster when you want to automate user creation and provisioning to the SSO process. Radiant Logic uses certificates exclusively as its authentication method. The others offer some combination of SAML, secure Web forms and custom applications connectors.

Some of the products also make use of browser-based plug-in extensions to handle the login tasks.

**2.** Second is the ability to work with Active Directory or some other directory service or identity provider to handle user logins to local desktops and other on-premises servers. This means that you can automatically recognize the groups of user accounts, such as network administrators. Some products can do two-way synchronization of user accounts with Active Directory so that as you add or delete users from one, your actions are matched on the other side. Other products support federated identity synchronization with outside networks, such as setting up a partner portal so that individual logins from your partner organizations don't need to be manually created on your SSO system.

Each product typically installs one or more pieces of Windows server software to handle the Active Directory synchronization tasks. Some also limit the amount of Active Directory information that is stored or transmitted in the cloud for security reasons.

**3.** Third is the ability to manage roles of individual users and their respective access permissions to various apps. The products have varying ways of accomplishing this, typically through particulars in their Web-based management consoles. Some also use the Active Directory group identities as the basis of how they configure their SSO roles and policies. McAfee has the most flexible configuration rules, and can set up individual apps with a particular identity provider and choose whether each app needs to have two-factor authentication.

**4.** Finally there is how each product handles reports and compliance actions. Some products have more graphical or summary reports than others. These products offer the opportunity for you to track exactly how many users are using particular applications, so if you are paying for site licenses, they could save you money if you can reduce your license counts.

documentation, so there is a lot to review and various relationships to understand before you can get started. If you are still running earlier Windows Server versions, this isn't the product to upgrade them.

RadiantOne handles its trusted relationships with its apps via certificates that have to be downloaded and installed separately using the Deployment Manager. This means that users are authenticating once with CFS and then gain access to the various trusted apps. Using certificates is cumbersome but avoids the browser plug-ins that many of the other vendors use for encrypting the login credentials.

But as a result it offers a paltry set of apps that it can automate logins with, including Google, Salesforce, WebEx and a few others. There is no mechanism for secure Web access or automatically adding a new app, as there is with some of its competitors. You can also protect your user login with SecurID tokens.

Reports are poor. There is a log export to Excel feature in CFS but that is more for events than anything a manager would understand. The dashboard is bare-bones and just indicates which services and connectors are running.

Pricing is based on a per-server basis: For 500 users it would be $25,000 for the first year and $6,250 for subsequent years, which includes 24/7 live support.

## SecureAuth

SecureAuth has a collection of on-premise pieces for its SSO product. You need to set up its own server on your network, and you can use one that comes as a virtual machine or run SecureAuth's software on physical hardware. Because of this you will need to review the documentation on how the SSO product interacts with the built-in Windows Server firewall and make sure both are configured properly. There are also browser extensions to download.

Its admin console is Web-based and perhaps the least attractive of all the products we tested, but beyond cosmetics it has lots of parameters and configuration options to make it a very powerful SSO product. The trick is in finding the right menu and place on the appropriate form to fill out properly. For example, to enable two-way Active Directory synchronization you set the "read only account" to false on the membership connection settings.

There are numerous multifactor authentication methods that are supported, including YubiKey, SMS text messaging, telephone, question-and-answer sessions and email dialogs. Like some of its competitors, you can block or allow specific IP address ranges, and set up workflows depending on whether you are using a trusted computer or accessing your apps from a public network. It supports a wide range of identity providers including AD, Lotus Notes, OpenLDAP and Novell eDirectory.

SecureAuth has the most complex pricing plan of any of the vendors we tested. There is a per-user fee, which starts out at $19.50 per user per year and can drop quickly to a few dollars a year for the largest installations. There are one-time per server and per-app fees, both of which start at $2,600. So for a 500-seat installation, the damage would be $20,000 for the first year and $10,000 for subsequent years. SecureAuth needs to simplify this scheme with far fewer options to make it more competitive — and understandable.

## SmartSignin

Like McAfee, SmartSignin has two separate offerings: one cloud-based and one for on-premise. The latter is only available at the higher Enterprise price. The product is still in beta and features are being added rapidly. They integrate with three identity providers at the moment: Google Apps, AD and Salesforce.com. The company is small but seems to be on the right track.

For example, SmartSignin seems to be paying a lot of attention to various security exploits, which is a good thing. It is the only one of the SSO products we tested that not only requires a password but a separate passphrase that you and you alone have knowledge of, and that you have to enter when you sign on to the SSO portal. All security information is stored on your desktop.

Their Active Directory connector doesn't transmit information in the clear in order to protect against man-in-the-middle attacks of your directory content.

They are weak in terms of application and browser support, with dozens rather than hundreds of apps pre-configured. They are also just getting started on their multifactor integration. The Enterprise package has a single option for out of band authentication using text SMS messages.

Their dashboard is well-designed and easy to navigate. There is a single report that is just a listing of events, which is less than satisfying.

Pricing for the Enterprise plan for 500 users would be $43,200 for the first and subsequent years. If you can do without the Enterprise features (multiple roles and on-premises server), then the Pro plan will bring this down to less than half that amount.

## Symplified

Symplified has two offerings: one that is cloud-based using an Amazon AMI and one that can be installed on-premise as a VM. Unlike the other vendors with separate offerings, Symplified has the same feature set. There are no browser extensions but the product has its own Active Directory connector called SimpleLink, which also supports LDAP connections and is a piece of software that has to be downloaded to any on-premise directory server. This creates a secure tunnel that encrypts the authentication requests.

Symplified calls its product an identity router, and the term is apt, as there are lots of access rules and policies like you would see in your network firewall, but of course concerning identities. It supports a large collection of identity providers, which Symplified calls User Stores, including LDAP, Oracle, Salesforce, NetSuite, Google and various SQL databases.

The app support isn't as plentiful as it could be, but you can set up your own custom connector using the procedures and scripting features in the product. Apps have a rather convoluted workflow that isn't as appealing as the other products and will take more time to debug and find configuration errors. This is because Symplified separates the authentication from the authorization process. We needed some help with our configuration, but imagine that once you get the hang of it you can create what you need in a few minutes once you know how it all works. After you set up your SSO, you hit the publish button to deploy Symplified explicitly. This adds an extra step in the debug cycle but we can understand why it is included.

Symplified is also weak on multifactor support, with Verisign's VIP tokens the only choice for now. The company plans on adding other methods in the near future.

The documentation is all online and hyperlinked to make it easy to navigate among the various pieces. Reports are more log files although some summary information can be found on the main dashboard page.

Pricing has two components: a one-time setup fee ranging from $1,500 to $5,000, and a user fee. This works out for 500 users to be $21,000 for the first year and $18,000 for subsequent years, which is on the low end of the price scale. These prices include 24/7 live support. ■

*Strom is a veteran technology journalist, speaker and former IT manager. He has written two books on computing and thousands of articles. His blog can be found at Strominator.com.*

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**BACKSPIN** | BY MARK GIBBS

# Want an iPhone 5? You might get tasered first

**WELL, THIS** is it, the last Backspin before we roast another beast and drink heavily in a forlorn attempt to damp the pain of endless caroling in every store we go into (does the tire store really need to play "Away in a Manger" amid the perfume of new tires?).

Anyway, in this season of compulsive consumption, the gift that keeps on giving (at least until it is superseded by a newer, better version in six months or a year) is the iPhone 5.

Consider Mumbai, where the high cost of the iPhone 5 as compared to consumer income was predicted to result in weak sales. All stocks of the device were sold out a few days after its November launch! Moreover, it was reported by India's CNN-IBN that despite resupply, a "minimum waiting period for [the iPhone] is around 10 to 15 days" which, in turn, has triggered a wave of gray-market sales.

China, where the price of the iPhone 5 compared to the average wage is even greater, saw the phone go on sale on Dec. 14 with "around 300,000 online orders already placed with China Unicom," reports Japan's NTD Television.

Even in the U.S. iPhone 5 availability is limited, and at some Apple store locations, a "two per customer" maximum is in place. Of course, if you're committed to getting one for each member of your family and there's more than two of you, there's going to be a problem.

And there will be even more of a problem when your English is poor, you think that other customers are being sold more than the maximum of two, and you attempt to document this outrage by taking a video (presumably using your existing iPhone), thereby annoying the store's management.

Such was the rather confused tale of one Xiaojie Li of Newton, Mass., who, after scoring two iPhone 5's at Apple's store in Nashua, N.H., had ordered two more online and went to pick them up at the same store. The reason she drove 40 miles to Nashua, even though there's an Apple store in Newton a few miles from her home, is the lack of sales tax in New Hampshire.

When the store management saw Ms. Li they asked her to leave and this was, it seems, when she started videoing and a policeman, who was moonlighting as store security, got involved and did the obvious thing: He tasered her (there is, of course, a video of the whole incident — tinyurl.com/c8dxnbq).

This ridiculously over-the-top response was described by Nashua's chief of police as justified because security is needed to control "groups who will buy large numbers of the devices and then sell them for a profit overseas."

So, what this comes down to is the police doing what they should, protecting Apple's "official" market and the fact that Ms. Li was tasered is the fault of the Indian and Chinese gray markets. Right. Talk about putting the "Christ!" in Christmas.

Here's hoping the charges of criminal trespass and resisting arrest against Ms. Li are dismissed and that she, and you, have a great holiday. And my seasonal purchasing advice? Stay away from Apple stores. ■

*Gibbs is inclined to celebrate Festivus in Ventura, Calif. Could you wrestle him to the floor? Challenges to backspin@gibbs.com and follow him on Twitter and App.net (@quistuipater) and on Facebook (quistuipater).*

**NETBUZZ** | BY PAUL MCNAMARA

# BlackBerry blacklists the Pooh gang

**A REPORT** surfaced recently contending that BlackBerry OS 10 will include a list of 106 prohibited passwords designed to prevent the clueless from choosing the likes of 123456, blackberry, or the ever-popular "password" as their password.

However, a RIM spokesman clarified for me that the list actually applies to BlackBerry ID universally, not only the upcoming operating system, and "has been active for some time now."

What he wasn't able to clarify, though, was why the BlackBerry blacklist enforces such a brutally disproportionate prohibition against names found on the character list of "Winnie the Pooh." Fully five of the no-can-do 106 — tigger, rabbit, eeyore, piglet and poohbear — are plucked from the pages of the children's classic.

Yes, the blacklist is heavy on cartoon and fictional characters, in general: mickey, donald, barney, batman, gandalf, george and snoopy are also not allowed. But inclusion or exclusion seems to carry little rhyme or reason, nursery or otherwise.

Calvin is banned, but not hobbes.

Dorothy and wizard are forbidden, but not scarecrow or tinman. Monkey is on the list, but not flyingmonkey. (Sure, longer character length matters.)

Want to use snowwhite as your password? Have a party. Same goes for all seven dwarfs.

Care for a more modern careless choice? Butthead is out, but not beavis, heh-heh. Homer is swell; so, too, simpsons and thesimpsons.

Why are Monday uppercase and monday lowercase prohibited, yet either variant of the other six days of the week passes BlackBerry password muster? (I'm assuming the answer is that people try to use Monday more often ... but why might that be? People hate Mondays.)

The blacklisting by BlackBerry of molson makes some sort of sense, I guess, since both are products of Canada. But if beer names are problematic — and they probably are — why ban miller and not budweiser, other than perhaps the latter is harder to spell?

(By the harder-to-spell standard, then, the least BlackBerry could have done would have been to leave poor eeyore be, since I have to look up that spelling every time.)

Baseball, football and even Canada's national religion, hockey, are all banned. But not basketball. The ninth letter was enough to earn basketball a pass? Who knows?

At a glance, it would appear that first names appear on the list or not nonsensically. Andrew, amanda, brandy, chelsea, jennifer, jonathan, maggie, matthew, michael (and mike), michelle, natasha, pamela, patrick, rachel, steven (but not stephen), thomas and victoria are banned.

Granted, victoria is a city name, too. But natasha is a no-no while robert, which would seem to be an automatic no siree, Bob, sails on through. Also OK are charles, david, patricia, richard, susan and william.

Perhaps the oddest entry on the blacklist — oddest until I looked it up — is ncc1701. Now I understand that I will have to endure the mockery of the "Star Trek" crowd for having had to look it up.

Of course, it's not my ill-advised behavior that has earned the Starship Enterprise a spot on a password blacklist. ■

*If you'd like to get your favorite Pooh character off the list, write to RIM. Otherwise, the address is buzz@nww.com.*


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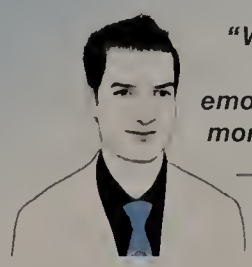

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